

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/582,277
Source: IFWP
Date Processed by STIC: 6/21/06

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 10/582,277

CRF Edit Date: 6/21/06
Edited by: [Signature]

___ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

___ Corrected the SEQ ID NO. Sequence numbers edited were:

___ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

___ Deleted: ___ invalid beginning/end-of-file text ; ___ page numbers

___ Inserted mandatory headings/numeric identifiers, specifically:

___ Moved responses to same line as heading/numeric identifier, specifically:

___ Other:



IFWP

RAW SEQUENCE LISTING

DATE: 06/21/2006

PATENT APPLICATION: US/10/582,277

TIME: 15:41:21

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\06212006\J582277.raw

```

3 <110> APPLICANT: Nielsen, Allan Kent
4      Rasmussen, Michael Dolberg
6 <120> TITLE OF INVENTION: A cell with improved`secretion mediated by MrgA protein or
7      homologue
9 <130> FILE REFERENCE: 10527.204-US
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/582,277
C--> 11 <141> CURRENT FILING DATE: 2006-06-10
11 <160> NUMBER OF SEQ ID NOS: 16
13 <170> SOFTWARE: PatentIn version 3.3
15 <210> SEQ ID NO: 1
16 <211> LENGTH: 815
17 <212> TYPE: DNA
18 <213> ORGANISM: Bacillus subtilis 168
21 <220> FEATURE:
22 <221> NAME/KEY: misc_feature
23 <222> LOCATION: (201)..(659)
24 <223> OTHER INFORMATION: MrgA encoding sequence
26 <400> SEQUENCE: 1
27 aagaatttgc gatacccgat cggaaagggc atcaagctca cctgctggt ccgatcgctt      60
29 tttccttggg ctgctgaggga gtctatcctg aagaaaaagc tattcagctg atctaaatta      120
31 taattattat aatttagtat tgatttttat ttagtatatg atataattaa gtcaacagat      180
33 cacaaggagg acgttatctt atgaaaactg aaaacgcaa aacaaatcaa acattagttg      240
35 agaattcact gaacacacaa ttatcaaact ggtttctttt atactctaag ctccaccggt      300
37 tccattggta tgtgaaaggg cctcatttct ttacattgca cgagaaattt gaagaacttt      360
39 atgaccatgc ggctgaaaca gtggatacca tcgctgagcg cctgctggcg attggcggac      420
41 agcctgttgc cacagtgaag gaatacactg agcatgcac tatcacagac ggcggaaacg      480
43 aaacatcagc atcagaaatg gtacaagcat tggtaaacga ctacaaacaa atcagcagcg      540
45 aatctaaatt cgtgatcggc ctggctgaag aaaatcaaga caatgcgaca gcggacttgt      600
47 ttgtcggatt aattgaagaa gttgaaaaac aagtgtggat gctttcctct tatttagggg      660
49 aacaaaaaag ctgaacctta atcgggttca gctttttgtt ttttcttagc ttgaactgct      720
51 ttctgtctgc ttggtcagtg ttgcgttcaa cgttttcggt tttcccttgc gcagcacttg      780
53 gattgttggt ttatctccga cttttaagtc ttgtt      815
56 <210> SEQ ID NO: 2
57 <211> LENGTH: 153
58 <212> TYPE: PRT
59 <213> ORGANISM: Bacillus subtilis 168
62 <220> FEATURE:
63 <221> NAME/KEY: PEPTIDE
64 <222> LOCATION: (1)..(153)
65 <223> OTHER INFORMATION: MrgA protein
67 <400> SEQUENCE: 2
69 Met Lys Thr Glu Asn Ala Lys Thr Asn Gln Thr Leu Val Glu Asn Ser
70 1          5          10          15

```

RAW SEQUENCE LISTING

DATE: 06/21/2006

PATENT APPLICATION: US/10/582,277

TIME: 15:41:21

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\06212006\J582277.raw

```

73 Leu Asn Thr Gln Leu Ser Asn Trp Phe Leu Leu Tyr Ser Lys Leu His
74      20      25      30
77 Arg Phe His Trp Tyr Val Lys Gly Pro His Phe Phe Thr Leu His Glu
78      35      40      45
81 Lys Phe Glu Glu Leu Tyr Asp His Ala Ala Glu Thr Val Asp Thr Ile
82      50      55      60
85 Ala Glu Arg Leu Leu Ala Ile Gly Gly Gln Pro Val Ala Thr Val Lys
86 65      70      75      80
89 Glu Tyr Thr Glu His Ala Ser Ile Thr Asp Gly Gly Asn Glu Thr Ser
90      85      90      95
93 Ala Ser Glu Met Val Gln Ala Leu Val Asn Asp Tyr Lys Gln Ile Ser
94      100     105     110
97 Ser Glu Ser Lys Phe Val Ile Gly Leu Ala Glu Glu Asn Gln Asp Asn
98      115     120     125
101 Ala Thr Ala Asp Leu Phe Val Gly Leu Ile Glu Glu Val Glu Lys Gln
102      130     135     140
105 Val Trp Met Leu Ser Ser Tyr Leu Gly
106 145     150

```

109 <210> SEQ ID NO: 3

110 <211> LENGTH: 8644

111 <212> TYPE: DNA

112 <213> ORGANISM: Artificial sequence

114 <220> FEATURE:

115 <223> OTHER INFORMATION: Plasmid pDG268neo

117 <400> SEQUENCE: 3

```

118 aacaaaattc tccagtcttc acatcggttt gaaaggagga agcgggaagaa tgaagtaaga      60
120 gggatttttg actccgaagt aagtcttcaa aaaatcaaat aaggagtgtc aagaatgttt      120
122 gcaaaacgat tcaaaacctc tttactgccg ttattcgctg gatttttatt gctgtttcat      180
124 ttggttcttg caggaccggc ggctgcgagt gctgaaacgg cgaacaaatc gaatgagctt      240
126 acagcaccgt cgatcaaaag cggaaccatt ctcatgcat ggaattgggtc gttcaatacg      300
128 ttaaaacaca atatgaagga tattcatgat gcaggatata cagccattca gacatctccg      360
130 attaaccaag taaaggaagg gaatcaagga gataaaagca tgtcgaactg gtactggctg      420
132 tatcagccga catcgatatca aattggcaac cgttacttag gtactgaaca agaatttaaa      480
134 gaaatgtgtg cagccgctga agaatatggc ataaaggtca ttggtgacgc gcggccgcgg      540
136 atccatacac aaaaaaacgc tgtgcccttt aaccgcacag cgttttttta ttgattaacg      600
138 cgttgccgct tctgcgttaa caagtcgct tccatacaag ttcgtgcttc ctaaactagt      660
140 tgccgtattc tttagatgat ttcgaatttg tacattagac caagatgggt tcttttgttt      720
142 aacaagggcg gccgcacctg caacatgagg agtagccatc gatgtaccgt ttaagctggc      780
144 atatgttgaa cctgggtatg tgctctgcac gtttaccctg ggtgcgacaa tgtcaaggcc      840
146 tgcgccatac tgtgaaaagc tagcgcggtt gttgttttga tcagtagctc cgactgccat      900
148 tgcgttcgca tagcgcgcgc gatagctgat tgagcctgca cctgaattcc cagatgccgc      960
150 tacaacaaga acgcctctag aagtcgcgct attaacagct tgctcgagtg tggcacttgg      1020
152 cgaagggctt ctaaactca aattagcaac gtgcatgcca ttgttccttg cccattccaa      1080
154 tccttgggca atcgagctga ccgaacctga accgctcgcc cctaggactt taacagcgta      1140
156 tagctcagcg ctccggcgcta cgccaagaac gccaatcgaa ttgtttaaag cagcgatcgt      1200
158 cccggccaca tgcgtgccat gccattccc atcttgagtc gacggttccc ctggtacaaa      1260
160 gcttgcgcca ccacgaatat ttagatctgg atgagtggat atccctgat cgaggacagc      1320
162 aacttttaca ccagaacctg tcaatccacg gttatgggca gctggggctt gcacacggct      1380
164 aattcccat ggtaccgatt gcgcattgt cgttacttct gcattcctct caatataaga      1440

```

RAW SEQUENCE LISTING

DATE: 06/21/2006

PATENT APPLICATION: US/10/582,277

TIME: 15:41:21

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\06212006\J582277.raw

166	aatcgctgga	tcgagttcaa	gcgcgctccac	atcttctg	cttaactcaa	cggataaaac	1500
168	aggaatcggt	tcaaattcat	gaagcaattc	aatttcgact	tcctcttcct	cagagagaat	1560
170	ggcgacctcg	tcatttgcct	ctacttggtc	tacaaactca	ctgacagctt	cctgctcatt	1620
172	aaagccaatt	aaatattttt	cttttgcttc	ttcagcagcc	gatgcgatcg	atgaactaaa	1680
174	agcaacagaa	atgagtagtg	cgggtgcttg	gacaattttc	cccaacgggt	tcttcattcg	1740
176	gtttccctcc	tcatttttat	agagctccat	aatacataat	tttcaaactg	ataaaatgat	1800
178	ttttcataaa	tccattagac	ggtgcaaata	tatgttttta	atgttcttcg	tttttaggca	1860
180	tccctccttt	caagataaat	aattttataca	ctattctatt	ggaatcttaa	tcattccaat	1920
182	agaaaaatat	gtaatgatta	taaataagtc	gcttcttata	ataaatatat	ttacatatct	1980
184	atttaatact	acatcatggt	aggtatagta	aggctatcaa	gggtgtctta	atcttctact	2040
186	gtaacaatgt	attggcatat	tatatattga	attgagaaaa	ttaaatacag	cgataattca	2100
188	catgaacaag	ttcattggta	gttatatttt	caaattttca	agggtgtgct	tgtatgtcat	2160
190	tctatagtta	gataagcatt	tgaggtagag	tccgtccgaa	tatatttgta	atctgaagaa	2220
192	ggttcaaaca	tatttctata	taacgtattc	tttttttgta	gttcttactt	ttgaggggcg	2280
194	ttacaattca	aagatattat	ctttaattaa	gcttaacatt	aataattctt	caattgcaac	2340
196	aaaaaaagca	cttttatcta	aggtttcatc	ttacgtttcg	agggcccttc	cattttctta	2400
198	tacaaattat	attatacata	tcagtaaaat	aatgtcaacc	cccctttatt	cctttttttt	2460
200	acacagcgga	cagtctggac	agcaggccct	taaggccaat	tctcatgttt	gacagcttat	2520
202	catcggaat	agttaccctt	attatcaaga	taagaaagaa	aaggattttt	cgctacgctc	2580
204	aaatccttta	aaaaaacaca	aaagaccaca	ttttttaatg	tggtctttat	tcttcaacta	2640
206	aagcacccat	tagttcaaca	aacgaaaatt	ggataaagtg	ggatattttt	aaaatatata	2700
208	tttatgttac	agtaattattg	acttttaaaa	aaggattgat	tctaatagaag	aaagcagaca	2760
210	agtaagcctc	ctaaattcac	tttagataaa	aatttaggag	gcatatcaaa	tgaactttaa	2820
212	taaaattgat	ttagacaatt	ggaagagaaa	agagatat	aatcattatt	tgaaccaaca	2880
214	aacgactttt	agtataacca	cagaaattga	tattagtgtt	ttataaccga	acataaaaaca	2940
216	agaaggatat	aaattttacc	ctgcatttat	tttcttagtg	acaagggtga	taaactcaaa	3000
218	tacagctttt	agaactgggt	acaatagcga	cggagagtta	ggttattggg	ataagttaga	3060
220	gccactttat	acaatttttg	atggtgtatc	taaaacattc	tctgggtatt	ggactcctgt	3120
222	aaagaatgac	ttcaaagagt	tttatgattt	atacctttct	gatgtagaga	aatataatgg	3180
224	ttcggggaaa	ttgtttccca	aaacacctat	acctgaaaat	gctttttctc	tttctattat	3240
226	tccatggact	tcatttactg	ggtttaactt	aaatatcaat	aataatagta	attaccttct	3300
228	accattattt	acagcaggaa	aattcattaa	taaaggtaat	tcaatatatt	taccgctatc	3360
230	tttacaggta	catcattctg	tttgtgatgg	ttatcatgca	ggattgttta	tgaactctat	3420
232	tcaggaattg	tcagataggc	ctaatagactg	gcttttataa	tatgagataa	tgccgactgt	3480
234	actttttaca	gtcgggtttc	taatgtcaat	aacctgcccc	gttagttgaa	gaagggtttt	3540
236	atattacagc	tccagatcct	ctacgcggga	cgcacgtggg	ccggcatcac	cggcgccaca	3600
238	gggtgcgggtg	ctggcgccca	tatcgccgac	atcaccgatg	gggaagatcg	ggctcgccac	3660
240	ttcgggctca	tgagcgcttg	tttcggcggtg	ggtaggtggg	caggccccgt	ggccggggga	3720
242	ctgttgggcg	ccatctcctt	gcatgcacca	ttccttgcg	cggcggtgct	caacggcctc	3780
244	aacctactac	tgggctgctt	cctaatagcag	gagtcgcata	agggagagcg	tcgacatgga	3840
246	tgagcgatga	tgatatccgt	ttaggctggg	cggtagatgc	ttctcgttca	ggcagtacgc	3900
248	ctcttttctt	ttccagacct	gagggaggcg	gaaatggtgt	gaggttcccg	gggaaaagcc	3960
250	aaataggcga	tcgcgggagt	gctttatttg	aagatcaggc	tatcactgcg	gtcaatagat	4020
252	ttcacaatgt	gatggctgga	cagcctgagg	aactctcgaa	cccgaatgga	aacaaccaga	4080
254	tattttatgaa	tcagcgcggc	tcacatggcg	ttgtgctggc	aaatgcagg	tcattcctctg	4140
256	tctctatcaa	tacggcaaca	aaattgcctg	atggcaggta	tgacaataaa	gctggagcgg	4200
258	gttcattttca	agtgaacgat	ggtaaactga	caggcacgat	caatgccagg	tctgtagctg	4260
260	tgctttatcc	tgatgatatt	gcaaaagcgc	ctcatgtttt	ccttgagaat	tacaaaacag	4320
262	gtgtaacaca	ttctttcaat	gatcaactga	cgattacctt	gcgtgcagat	gcgaatacaa	4380

RAW SEQUENCE LISTING

DATE: 06/21/2006

PATENT APPLICATION: US/10/582,277

TIME: 15:41:21

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\06212006\J582277.raw

264	caaaagccgt	ttatcaaate	aataatggac	cagacgacag	gcgtttaagg	atggagatca	4440
266	attcacaate	ggaaaaggag	atccaatttg	gcaaaacata	caccatcatg	ttaaaaggaa	4500
268	cgaacagtga	tggtgtaacg	aggaccgaga	aatacagttt	tgttaaaaga	gatccagcgt	4560
270	cggccaaaac	catcggtat	caaaatccga	atcattggag	ccaggtaaat	gcttatatct	4620
272	ataaacatga	tgggagccga	gtaattgaat	tgaccggatc	ttggcctgga	aaaccaatga	4680
274	ctaaaaatgc	agacggaatt	tacacgctga	cgctgcctgc	ggacacggat	acaaccaacg	4740
276	caaaagtgat	ttttaataat	ggcagcgcgc	aagtgcgcgg	tcagaatcag	cctggctttg	4800
278	attacgtgct	aaatggttta	tataatgact	cggttcttaag	cggttctctt	ccccattgag	4860
280	ggcaaggcta	gacgggactt	accgaaagaa	accatcaatg	atggtttctt	ttttgttcat	4920
282	aaatcagaca	aaacttttct	cttgcaaaaag	tttgtaagt	gttgacacat	ataaatgtga	4980
284	aatacttcac	aaacaaaaag	acatcaaaga	gaaacatacc	ctgcaaggat	gctgatattg	5040
286	tctgcatttg	cgccggagca	aacccaaaac	ctggtgagac	acgccttgaa	ttagtagaaa	5100
288	agaacttgaa	gattttcaaa	ggcatcggtt	gtgaagtcat	ggcgagcgga	tttgacggca	5160
290	ttttcttagt	cggttaacaat	cctcggttaa	ggacaaggac	ctgagcgga	gtgtatcgta	5220
292	cagtagacgg	agtatactag	tatagtctat	agtcggtgga	attattatat	ttatctccga	5280
294	cgatattctc	atcagtgaat	tccagctgga	gttcttttagc	aaattttttt	attagctgaa	5340
296	cttagtatta	gtggggccgc	tgataattac	taatactagg	agaagttaat	aaatacgtaa	5400
298	ccaacatgat	taacaattat	tagagggtcat	cgttcaaaaat	ggtatgcgtt	ttgacacatc	5460
300	cactatata	ccgtgtcggt	ctgtccactc	ctgaatccca	ttccagaaat	tctctagcga	5520
302	ttccagaagt	ttctcagagt	cggaaagtgt	accagacatt	acgaactggc	acagatggct	5580
304	ataacctgaa	ggaagatctg	attgcttaac	tgcttcagtt	aagaccgaag	cgctcgctcg	5640
306	ataacagatg	cgatgatgca	gaccaatcaa	ctggccacct	gccattgcta	cctgtacagt	5700
308	caaggatggt	agaaatggtg	tcggtccttg	cacacgaata	ttacgccatt	tgcttgcata	5760
310	ttcaaacagc	tcttctacga	taagggcaca	aatcgcatcg	tggaacgttt	gggttcttac	5820
312	cgattttagc	gtttgataca	ctttctctaa	gtatccacct	gaatcataaa	tcggcaaaaat	5880
314	agagaaaaat	tgaccatgtg	taagcggcca	atctgattcc	acctgagatg	cataatctag	5940
316	tagaatctct	tcgctatcaa	aattcacttc	caccttccac	tcaccgggtg	tccattcatg	6000
318	gctgaactct	gcttctctct	ttgacatgac	acacatcatc	tcaatatccg	aataggggccc	6060
320	atcagtctga	cgaccaagag	agccataaac	accaatagcc	ttaacatcat	ccccatattt	6120
322	atccaatatt	cgttccttaa	tttcatgaac	aatcttcatt	ctttcttctc	tagtcattat	6180
324	tattggtcca	ttcactattc	tcattccctt	ttcagataat	tttagatttg	cttttctaaa	6240
326	taagaatatt	tgagagcagc	cgttcttatt	cagctattaa	taactcgtct	tcctaagcat	6300
328	catggtctca	cttttccact	ttttgtcttg	tccactaaaa	cccttgattt	ttcatctgaa	6360
330	taaatgctac	tattaggaca	cataatatta	aaagaaaccc	ccatctattt	agttatttgt	6420
332	ttagtcaact	ataactttta	cagatggggt	ttttctgtgc	aaccaatttt	aagggttttc	6480
334	aatactttta	aacacataca	taccaacact	tcaacgcacc	tttcagcaac	taaaataaaa	6540
336	atgacgttat	ttctatatgt	atcaagataa	gaaagaacaa	gttcaaaacc	atcaaaaaaa	6600
338	gacacctttt	caggtgcttt	ttttatttta	taaactcatt	ccctgatctc	cccatactcc	6660
340	tccaatccaa	agctatttag	aaagattact	atatcctcaa	acaggcggtg	accggcctct	6720
342	tcacgaggaa	tgcgcgcgac	cttcagcatc	gccggcatgt	ccccctggcg	gacgggaagt	6780
344	atccagctcg	aggctgggccc	gcgttgctgg	cgtttttcca	taggctccgc	ccccctgacg	6840
346	agcatcacia	aaatcgacgc	tcaagtcaga	ggtggcgaaa	cccgacagga	ctataaagat	6900
348	accaggcggt	ttcccttgga	agctccctcg	tgcgctctcc	tggtccgacc	ctgccgttta	6960
350	ccggatacct	gtccgccttt	ctcccttcgg	gaagcgtggc	gctttctcat	agctcacgct	7020
352	gtaggatatc	cagttcggtg	taggtcggtc	gctccaagct	gggctgtgtg	cacgaacccc	7080
354	ccgttcagcc	cgaccgctgc	gccttatccg	gtaactatcg	tcttgagtcc	aaccgggtaa	7140
356	gacacgactt	atcgccactg	gcagcagcca	ctggtaacag	gattagcaga	gcgaggtatg	7200
358	taggcgggtg	tacagagttc	ttgaagtggg	ggcctaacta	cggctacact	agaaggacag	7260
360	tatttggtat	ctgcgctctg	ctgaagccag	ttaccttcgg	aaaaagagtt	ggtagctctt	7320

RAW SEQUENCE LISTING

DATE: 06/21/2006

PATENT APPLICATION: US/10/582,277

TIME: 15:41:22

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\06212006\J582277.raw

```

362 gatccggcaa acaaaccacc gctggttagcg gtgggtttttt tgtttgcaag cagcagatta 7380
364 cgcgcagaaa aaaaggatct caagaagatc ctttgatctt ttctacgggg tctgacgctc 7440
366 agtggaacga aaactcacgt taagggattt tggatcatgag attatcaaaa aggatcttca 7500
368 cctagatcct tttaaattaa aaatgaagtt tttaatcaat ctaaagtata tatgagtaaa 7560
370 cttggtctga cagttaccaaa tgcttaataca gtgaggcacc tatctcagcg atctgtctat 7620
372 ttcgtttcatc catagttagcc tgactccccg tcgtgtagat aactacgata cgggagggct 7680
374 taccatctgg cccagtgct gcaatgatac cgcgagaccc acgctcaccg gctccagatt 7740
376 tatcagcaat aaaccagcca gccggaaggg ccgagcgcag aagtggctct gcaactttat 7800
378 cgcctccat ccagtctatt aattgttgcc gggaagctag agtaagtagt tcgccagtta 7860
380 atagtttgcg caacgttggt gccattgctg caggcatcgt ggtgtcacgc tcgtcgtttg 7920
382 gtatggcttc attcagctcc gggtcccaac gatcaaggcg agttacatga tcccccatgt 7980
384 tgtgcaaaaa agcgggttagc tccttcggtc ctccgatcgt tgtcagaagt aagttggccg 8040
386 cagtgttatc actcatggtt atggcagcac tgcataattc tcttactgtc atgccatccg 8100
388 taagatgctt ttctgtgact ggtgagtact caaccaagtc attctgagaa tagtgtatgc 8160
390 ggcgaccgag ttgctcttgc ccggcgtaa cacgggataa taccgcgcca catagcagaa 8220
392 ctttaaaagt gtcctcatt ggaaaacggt cttcgggcg aaaactctca aggatcttac 8280
394 cgtctgttag atccagttcg atgtaacca ctctgtcacc caactgatct tcagcatctt 8340
396 ttactttcac cagcgtttct gggtgagcaa aaacaggaag gcaaaatgcc gcaaaaaagg 8400
398 gaataagggc gacacggaaa tgttgaaata tcatactctt cttttttcaa tattattgaa 8460
400 gcatttatca gggttattgt ctcatgagcg gatacatatt tgaatgtatt tagaaaaata 8520
402 aacaaatagg ggttcgcgc acatttcccc gaaaagtgcc acctgacgtc taagaaacca 8580
404 ttattatcat gacattaacc tataaaaata ggcgtatcac gaggcccttt cgtcttcaag 8640
406 aatt
409 <210> SEQ ID NO: 4
410 <211> LENGTH: 91
411 <212> TYPE: DNA
412 <213> ORGANISM: Artificial sequence
414 <220> FEATURE:
415 <223> OTHER INFORMATION: Primer p920mrgaF2
417 <400> SEQUENCE: 4
418 ctgaggccaa ttaggccaaag ttattcttgc acattagggg acatgcatga tataataggt 60
420 aaagtaacaa gatcacaagg aggacgttat c 91
423 <210> SEQ ID NO: 5
424 <211> LENGTH: 34
425 <212> TYPE: DNA
426 <213> ORGANISM: Artificial sequence
428 <220> FEATURE:
429 <223> OTHER INFORMATION: Primer MBmrgaR2
431 <400> SEQUENCE: 5
432 tgaaggatcc acgcgtccag cagacagaaa gcag 34
435 <210> SEQ ID NO: 6
436 <211> LENGTH: 49
437 <212> TYPE: DNA
438 <213> ORGANISM: Artificial sequence
440 <220> FEATURE:
441 <223> OTHER INFORMATION: Promoter P920
443 <400> SEQUENCE: 6
444 aagttttattc ttgacattag ggaacatgca tgatataata ggtaaagta 49
447 <210> SEQ ID NO: 7

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/582,277

DATE: 06/21/2006

TIME: 15:41:23

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\06212006\J582277.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date

**Raw Sequence Listing before editing
(for reference only)**



IFWP

RAW SEQUENCE LISTING

DATE: 06/19/2006

PATENT APPLICATION: US/10/582,277

TIME: 12:17:29

Input Set : A:\01-SQ Listing-07 Jun 2006.txt

Output Set: N:\CRF4\06192006\J582277.raw

3 <110> APPLICANT: Nielsen, Allan Kent
 4 Rasmussen, Michael Dolberg
 6 <120> TITLE OF INVENTION: A cell with improved secretion mediated by MrgA
 protein or
 7 homologue
 9 <130> FILE REFERENCE: 10527.204-US
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/582,277
 C--> 11 <141> CURRENT FILING DATE: 2006-06-10
 11 <160> NUMBER OF SEQ ID NOS: 16
 13 <170> SOFTWARE: PatentIn version 3.3

ERRORED SEQUENCES

621 <210> SEQ ID NO: 16
 622 <211> LENGTH: 8152
 623 <212> TYPE: DNA
 624 <213> ORGANISM: Artificial sequence
 626 <220> FEATURE:
 627 <223> OTHER INFORMATION: Plasmid pAN213ban
 629 <400> SEQUENCE: 16

630 ccgcggtgta aaaaatagga ataaaggggg gttgacatta ttttactgat atgtataata	60
632 taatttgat aagaaaatga gagggagagg aaacatgatt caaaaacgaa agcggacagt	120
634 ttcgttcaga cttgtgctta tgtgcacgct gttatttgct agtttgccga ttacaaaaac	180
636 atcagccgta aatggcacgc tgatgcagta ttttgaatgg tatacgccga acgacggcca	240
638 gcattggaaa cgattgcaga atgatgcgga acatttatcg gatatcgga tctactgccgt	300
640 ctggattcct ccgcataca aaggattgag ccaatccgat aacggatacg gaccttatga	360
642 tttgtatgat ttaggagaat tccagcaaaa agggacggctc agaacgaaat acggcacaaa	420
644 atcagagctt caagatgcga tcggctcact gcattcccgg aacgtccaag tatacggaga	480
646 tgtgggtttg aatcataagg ctggtgctga tgcaacagaa gatgtaactg ccgtcgaagt	540
648 caatccggcc aatagaaatc aggaaacttc ggaggaatat caaatcaaag cgtggacgga	600
650 ttttcgtttt ccgggccgtg gaaacacgta cagtgatatt aaatggcatt ggtatcattt	660
652 cgacggagcg gactgggatg aatcccggaa gatcagccgc atctttaagt ttcgtgggga	720
654 aggaaaagcg tgggattggg aagtatcaag tgaaaacggc aactatgact atttaatgta	780
656 tgctgatgtt gactacgacc accctgatgt cgtggcagag acaaaaaaat ggggtatctg	840
658 gtatgcgaat gaactgtcat tagacggctt ccgtattgat gccgccaaac atattaaatt	900
660 ttcattttctg cgtgattggg ttcaggcggg cagacaggcg acgggaaaag aaatgtttac	960
662 ggttgccgag tattggcaga ataatgccgg gaaactcgaa aactacttga ataaaacaag	1020
664 ctttaaatcaa tccgtgtttg atgttccgct tcatttcaat ttacaggcgg ctctctcaca	1080
666 aggagcgga tatgatatga ggcgtttgct ggacgggtacc gttgtgtcca ggcacccgga	1140
668 aaaggcggtt acatttggtg aaaatcatga cacacagccg ggacagtcac tggaaatcgac	1200
670 agtccaaact tggtttaaac cgcttgcata cgcttttatt ttgacaagag aatccggtta	1260
672 tcctcaggtg ttctatgggg atatgtacgg gacaaaaggg acatcgccaa aggaaattcc	1320
674 ctactgaaa gataatatag agccgatatt aaaagcgcgt aaggagtacg catacgggcc	1380

*Does Not Comply
Corrected Diskette Needed*

RAW SEQUENCE LISTING

DATE: 06/19/2006

PATENT APPLICATION: US/10/582,277

TIME: 12:17:29

Input Set : A:\01-SQ Listing-07 Jun 2006.txt

Output Set: N:\CRF4\06192006\J582277.raw

```

676 ccagcacgat tatattgacc acccggatgt gatcggatgg acgaggggaag gtgacagctc 1440
678 cgccgcca aa tcagggtttgg ccgctttaat cacggacgga cccggcggat caaagcggat 1500
680 gtatgccggc ctgaaaaatg ccggcgagac atggtatgac ataacgggca accgttcaga 1560
682 tactgtaaaa atcggatctg acggctgggg agagtttcat gtaaacgatg ggtccgtctc 1620
684 cttttatgtt cagaaataag gtaataaaaa aacacctcca agctgagtgc gggatatcagc 1680
686 ttggagggtgc gttttatttt tcagccgtat gacaagggtcg gcatcagggtg tgacaacgcg 1740
688 tgatccagac cagttccctg agcttccgtc agtcggatcc cattgcgga aatagtcata 1800
690 ggcacccctg aattcaatgt tgcgaataat gacgttatca ctcttgattt ggaagtttcc 1860
692 tcccacgact ttagcgtag tccctgaacc gacgatcgtc gtgtttgcag ggatatccac 1920
694 catgaccctg gcttttttgt tttctgaga gcgtgctctc gcttcttctt gtgttcccg 1980
696 cggctctttt ttgccccatg tgctaggatc ataggctttc aaatatttgt ccaaatacata 2040
698 ctccggatct ttatagtcac ttaggccaag cggcttcaga ttgtcatcca cgttcatgtc 2100
700 aatcgttccc ttgatataaa tgatttttgg cgttgtgttc gtttcccttc ctaatgcgca 2160
702 gacaagctgg tttctgttgc tgacggtata cacatttgag gaggatgctt ttgatccgcc 2220
704 tgtcgtgccc gtcgagtagc cgcgccagcc atcattggat cccaacgtct ggtggcctaa 2280
706 atcagctgcg ttgcgcgccag ctggagtcaa tcctaaaaac aaagccgtag ctaacatcaa 2340
708 aagggcctcg tgatacgctt atttttatag gttaatgtca tgataataat ggtttcttag 2400
710 acgtcagggtg gcacttttcg gggaaatgtg cgcggaaccc ctatttgttt atttttctaa 2460
712 atacattcaa atatgtatcc gctcatgaga caataacctt gataaatgct tcaataatat 2520
714 tgaaaaagga agagtatgag tattcaacat ttccgtgtcg cctttattcc cttttttgcg 2580
716 gcattttgcc ttccgtgttt tgctcaccga gaaacgctgg tgaaagtaaa agatgctgaa 2640
718 gatcagttgg gtgcacgagt ggggttacat gaactggatc tcaacagcgg taagatcctt 2700
720 gagagttttc gccccgaaga acggtttcca atgatgagca cttttaaagt tctgctatgt 2760
722 ggcgcgggtat tatcccggtg tgacgcgggg caagagcaac tcggtcgccg catacactat 2820
724 tctcagaatg acttggttga gtactacca gtacagaaa agcatcttac ggatggcatg 2880
726 acagtaagag aattatgcag tgctgccata accatgagtg ataactctgc ggccaactta 2940
728 cttctgacaa cgatcggagg accgaaggag ctaaccgctt ttttgacaaa catgggggat 3000
730 catgtaactc gccttgatcg ttgggaaccg gagctgaatg aagccatacc aaacgacgag 3060
732 cgtgacacca cgatgctgc agcaatggca acaacgttgc gcaaactatt aactggcgaa 3120
734 ctacttactc tagcttcccg gcaacaatta atagactgga tggaggcgga taaagttgca 3180
736 ggaccacttc tgcgctcggc ccttccggct ggctggttta ttgctgataa atctggagcc 3240
738 ggtgagcgtg ggtctcgcg gtatcattgca gcaactgggc cagatggtaa gccctccgt 3300
740 atcgtagtta tctacacgac ggggagtcag gcaactatgg atgaacgaaa tagacagatc 3360
742 gctgagatag gtgcctcact gattaagcat tggtaactgt cagaccaagt ttactcatat 3420
744 atactttaga ttgattttaa acttcatttt taatttataa ggatctaggt gaagatcctt 3480
746 tttgataatc tcatgaccaa aatcccttaa cgtgagtttt cgttccactg agcgtcagac 3540
748 cccgtagaaa agatcaaagg atcttcttga gatccttttt ttctgcgcgt aatctgctgc 3600
750 ttgcaaacaa aaaaaccacc gctaccagcg gtggtttgtt tgccggatca agagctacca 3660
752 actctttttc cgaaggtaac tggttccagc agagcgcaga taccaaatac tgtccttcta 3720
754 gtgtagccgt agttaggcca ccacttcaag aactctgtag caccgcctac atacctcgt 3780
756 ctgctaatac tgttaccagt ggtgctgcc agtggcgata agtcgtgtct taccgggttg 3840
758 gactcaagac gatagttacc ggataaggcg cagcggctcg gctgaacggg gggttcgtgc 3900
760 acacagccca gcttggagcg aacgacctac accgaactga gatacctaca gcgtgagcta 3960
762 tgagaaagcg ccacgcttcc cgaagggaga aaggcggaca ggtatccggt aagcggcagg 4020
764 ctcggaacag gagagcgcac gagggagctt ccagggggaa acgcttggtt tctttatagt 4080
766 cgtgcgggt ttgcgccct ctgacttgag cgtcgatttt tgtgatgctc gtcagggggg 4140
768 cggagcctat ggaaaaacgc cagcaacgcg ccccgacctc gagctggata cttcccgctc 4200
770 gccaggggga catgccggcg atgctgaagg tcgcgcgcac tcccgatgaa gaggccggtt 4260
772 accgcctgtt tgaggatata gtaatctttc taaatagctt tggattggag gagtatgggg 4320

```

RAW SEQUENCE LISTING

DATE: 06/19/2006

PATENT APPLICATION: US/10/582,277

TIME: 12:17:29

Input Set : A:\01-SQ Listing-07 Jun 2006.txt

Output Set: N:\CRF4\06192006\J582277.raw

```

774 agatcagggga atgagtttat aaaataaaaa aagcacctga aaaggtgtct ttttttgatg 4380
776 gttttgaact tgttctttct tatcttgata catatagaaa taacgtcatt tttatttttag 4440
778 ttgctgaaag gtgcgttgaa gtgttggtat gtatgtgttt taaagtattg aaaaccctta 4500
780 aaattgggtg cacagaaaaa ccccatctgt taaagttata agtgactaaa caaataacta 4560
782 aatagatggg ggtttctttt aatattatgt gtccataatag tagcatttat tcagatgaaa 4620
784 aatcaagggg tttagtgagc aagacaaaaa gtggaaaagt gagaccatga tgcttaggaa 4680
786 gacgagttat taatagctga ataagaacgg tgctctccaa atattcttat ttagaaaagc 4740
788 aaatctaaaa ttatctgaaa agggaatgag aatagtgaat ggaccaataa taatgactag 4800
790 agaagaaaga atgaagattg ttcataaaat taaggaacga atattggata aatatgggga 4860
792 tgatgttaag gctattgggt tttatggctc tcttgggtcgt cagactgatg ggccctattc 4920
794 ggatattgag atgatgtgtg tcatgtcaac agaggaagca gagttcagcc atgaatggac 4980
796 aaccgggtgag tggaaggtgg aagtgaattt tgatagcgaa gagattctac tagattatgc 5040
798 atctcaggtg gaatcagatt ggccgcttac acatggtcaa ttttctcta ttttgccgat 5100
800 ttatgattca ggtggatact tagagaaagt gtatcaaact gctaaatcgg tagaagccca 5160
802 aacgttccac gatgcgattt gtgcccctat cgtagaagag ctgtttgaat atgcaggcaa 5220
804 atggcgtaat attcgtgtgc aaggaccgac aacatttcta ccatccttga ctgtacaggt 5280
806 agcaatggca ggtgccatgt tgattgggtc gcatcatcgc atctgttata cgacgagcgc 5340
808 ttcggtctta actgaagcag ttaagcaatc agatcttctc tcaggttatg accatctgtg 5400
810 ccagttcgta atgtctgggt aactttccga ctctgagaaa cttctggaat cgctagagaa 5460
812 tttctggaat gggattcagg agtgacacga acgacacgga tatatagtgg atgtgtcaaa 5520
814 acgcatacca ttttgaacga tgacctctaa taattgttaa tcatgttggt tacgtattta 5580
816 ttaacttctc ctagtattag taattatcag cggcccccact aatactaagt tcagctaata 5640
818 aaaaaatttg ctaaagaact ccagctggat ttcactgatg agaatatcgt cggagataaa 5700
820 tataataatt ccacggacta tagactatac tagtatactc cgtctactgt acgatacact 5760
822 tccgtccagg tccctgtcct ttaacgagga ttgttaccga ctaagaaaat gccgtcaaat 5820
824 ccgctcgcca tgacttcaag tcgaccgcga cccgcttgat ttataacatt tgatttcaca 5880
826 ttagcagaag catcaatcga tccatgcaga gacggcgctc agccgacaga agagctcagc 5940
828 ccgtttgcag ccgatgcgtt gatctgtgtg ccgttcagca acgtgccgga gtcatataaa 6000
830 gccgttcccc cgtgaatac gctgatcgtt ttagcagctg acagtcccg taccgtcaatg 6060
832 acattgtttt gggcatagat tttagatgac tttccgattc cccatgcata gctaaaagga 6120
834 taacttgaag agcttgtgct tccctcataa tagttgttgt atacgtgcac ttgcccgaag 6180
836 cggactctcg gcgcgcgctg gacaatatat ttatagcggg tatgatgcag cgtaattttt 6240
838 aatttgccgt catcgagggt tttgctgtca cttgatccga aaatggagct tttatcatga 6300
840 tcgtgataat agttgtagga catcgtgata tagtttagcag cgttggaagc atccgttttg 6360
842 ccgtcatggg gctgatattt tcttccataa tatttcgggt atgtgctgtc cggacgcgaa 6420
844 ccgtgtcggc gatataggcg ccagcaaccg cactgtggc gccggtgatg ccggccacga 6480
846 tgcgtccggc gtagaggatc tggagctgta atataaaaac cttcttcaac taacggggca 6540
848 ggttagtgac attagaaaac cgactgtaa aagtacagtc ggcattatct catattataa 6600
850 aagccagtca ttaggcctat ctgacaattc ctgaatagag ttcataaaca atcctgcatg 6660
852 ataaccatca caaacagaat gatgtacctg taaagatagc ggtaaatata ttgaattacc 6720
854 tttattaatg aattttcctg ctgtaataat gggtagaagg taattactat tattattgat 6780
856 atttaagtta aaccagtaa atgaagtcca tggttatgtc tttgtatccc gtttgtatta 6840
858 cttgatcctt taactctggc aacctcaaa attgaatgag acatgctaca cctccggata 6900
860 ataaatatat ataaacgtat atagatttca taaagtctaa cacactagac ttatttactt 6960
862 cgtaattaa gctttaaacc gtgtgctcta cgacaaaaac tataaaacct ttaagaactt 7020
864 tcttttttta caagaaaaaa gaaattagat aaatctctca tatcttttat tcaataatcg 7080
866 catccgattg cagtataaat ttaacgatca ctcacatgt tcatatttat cacagctcgt 7140
868 gctataatta tactaatttt ataaggagga aaaaatatgg gcatttttag tatttttgta 7200
870 atcagcacag ttcattatca accaaacaaa aaataagtg ttataatgaa tcgttaataa 7260

```

RAW SEQUENCE LISTING

DATE: 06/19/2006

PATENT APPLICATION: US/10/582,277

TIME: 12:17:29

Input Set : A:\01-SQ Listing-07 Jun 2006.txt

Output Set: N:\CRF4\06192006\J582277.raw

```

872 gcaaaattca tataaccaa ttaaagaggg ttataatgaa cgagaaaaat ataaaacaca 7320
874 gtcaaaactt tattacttca aaacataata tagataaaat aatgacaaat ataagattaa 7380
876 atgaacatga taatatcttt gaaatcggct caggaaaagg ccattttacc cttgaattag 7440
878 taaagaggtg taatttcgta actgccattg aaatagacca taaattatgc aaaactacag 7500
880 aaaataaact tgttgatcac gataatttcc aagtttttaa caaggatata ttgcagttta 7560
882 aatttcctaa aaaccaatcc tataaaatat atggtaatat accttataac ataagtacgg 7620
884 atataatacg caaaattggt tttgatagta tagctaata gatttattta atcgtggaat 7680
886 acgggtttgc taaaagatta ttaaatacaa aacgctcatt ggcattactt ttaatggcag 7740
888 aagttgatat ttctatatta agtatggttc caagagaata ttttcacct aaacctaaag 7800
890 tgaatagctc acttatcaga ttaagtagaa aaaaatcaag aatatcacac aaagataaac 7860
892 aaaagtataa ttatttcggt atgaaatggg ttaacaaaga atacaagaaa atatttacia 7920
894 aaaatcaatt taacaattcc ttaaaacatg caggaattga cgatttaaac aatattagct 7980
896 ttgaacaatt cttatctctt ttcaatagct ataaattatt taataagtaa gttaagggat 8040
898 gcataaactg catcccttaa cttgttttcc gtgtgcctat tttttgtgaa tcgacctgca 8100
900 gscatgcaag ctttttcaat tcatccgtca cagtctcagg atgattgatc ac 8152

```

E--> 906 16

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/582,277

DATE: 06/19/2006

TIME: 12:17:30

Input Set : A:\01-SQ Listing-07 Jun 2006.txt

Output Set: N:\CRF4\06192006\J582277.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:906 M:254 E: No. of Bases conflict, this line has no nucleotides.